ABSTRACT

On the basis of at least a difference between a desired state amount related to a posture of a robot 1 about a vertical axis or a floor surface normal line axis and an actual state amount of the robot 1 and a permissible range of a restriction object amount, namely, a vertical component of a floor reaction force moment or a component of the floor reaction force moment in a floor surface normal line direction to be applied to the robot 1, instantaneous values of a desired motion and a desired floor reaction force are determined such that a difference between a floor reaction force moment balancing with the desired motion on a dynamic model and a floor reaction force moment of the desired floor reaction force approximates the aforesaid difference to zero, while having the restriction object amount, which is associated with the desired floor reaction force, fall within the permissible range.